SEQUENCE LISTING

<110> Perera, Ranjan
Rice, Stephen
Eagleton, Clare

<120> Compositions and Methods for the Modification of Gene Expression

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<150> U.S. No. 10/291,447
<151> 2002-11-08

<150> U.S. No. 60/425,087
<151> 2002-11-08

<150> U.S. No. 10/137,036
<151> 2002-04-30

<150> U.S. No. 09/724,624
<151> 2000-11-28

<150> U.S. No. 09/598,401
<151> 2000-06-20

<150> PCT/NZ00/00018
<151> 2000-02-24

<150> U.S. No. 60/146,591
<151> 1999-07-30

<150> U.S. Patent No. 09/276,599
<151> 1999-03-25

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<212> DNA
<213> Artificial Sequence

<220>
<223> Made in a lab

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<210> 16
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 16
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<210> 17
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 17
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<210> 18
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 18
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<210> 19

<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 19
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<210> 20
<211> 363
<212> DNA
<213> Eucalyptus grandis

<400> 20
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ctt 363

<210> 21
<211> 839
<212> DNA
<213> Pinus radiata

<220>
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<400> 21
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<210> 22
<211> 881
<212> DNA
<213> Eucalyptus grandis

<400> 22
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ggtcgtttgt tgtcctgttt ttccttgtca agagcttatt atgagggtcc ttttgctctt 720
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<210> 23
<211> 350
<212> DNA
<213> Eucalyptus grandis

<400> 23
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accataatat attcaacgtg atgcttaaac tttaatcgag tatgcaatgt agtccataat 180
atattcaata tgatccttca atccaattga agtgtgcaat gtggtcgcta gatttttta 240
tgtattcaac ttagtcttta agctaccaac cttccaataa tttatgtttt agaaataata 300
tcgaacatct tttatattat tcaaggaata aaacgaacat gcatcaaaag 350

<210> 24
<211> 49
<212> DNA
<213> Eucalyptus grandis

<400> 24
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<210> 25
<211> 909
<212> DNA
<213> Eucalyptus grandis

<400> 25
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acactcacct tgcatttata cgatggttgt gagcagtgca ggctggtggt gctgcaaatt 120
tatgatgctg atgtgatagg cagatgaatg gcagttgagc taagttaaag ccctcataca 180
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aaaaaaaaa 909

<210> 26
<211> 430
<212> DNA
<213> Eucalyptus grandis

<400> 26
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cagccgtgga 430

<210> 27
<211> 1253
<212> DNA
<213> Eucalyptus grandis

<400> 27
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ttacttttc tataaacaat attacaaact caaaaaaaaa aaaaaaaaaa aaa 1253

<210> 28
<211> 99
<212> DNA
<213> Eucalyptus grandis

<400> 28
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cttctccaat ggctgcgaat ttcgtcattc cgaccaaaa 99

<210> 29
<211> 927
<212> DNA
<213> Eucalyptus grandis

<400> 29
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<210> 30
<211> 411
<212> DNA
<213> Eucalyptus grandis

<400> 30
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<210> 31
<211> 178
<212> DNA
<213> Eucalyptus grandis

<400> 31
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aggaacttgg gaagaaccaa tgatgcctgg tcactgagtg atcgatgaat gcaatagt 178

<210> 32
<211> 178
<212> DNA
<213> Eucalyptus grandis

<400> 32
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tgggatttag tatgttgatt gagtacccgt cgccaccacc ttcaagtaaa tcaggagtca 120
gcagaaaccc agtacactcg ccaaacggag ctaaacctga tggccatacg atttcttt 178

<210> 33
<211> 178
<212> DNA
<213> Eucalyptus grandis

<400> 33
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tcactgagcc tcttgctttt cctccggaat ctcacggcac cggaatgccg gaggcaac 178

<210> 34
<211> 1274

<212> DNA
<213> Eucalyptus grandis

<400> 34
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<210> 35
<211> 795
<212> DNA
<213> Eucalyptus grandis

<400> 35
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gccaatgcca agttctctag caagagctcc tctcactcct tccccactca atgcttctct 180
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ataatcagca atgct 795

<210> 36
<211> 1200
<212> DNA
<213> Eucalyptus grandis

<400> 36
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<210> 37
<211> 648
<212> DNA
<213> Eucalyptus grandis

<400> 37
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tcaattagtc aacttttcac acttgatgat cgattaagta gatggatgac atggtctttt 600
accagcccgg gccgtcgacc acgcgtgccc tatagtgagt cgtattac 648

<210> 38
<211> 288
<212> DNA
<213> Eucalyptus grandis

<400> 38
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<210> 39
<211> 382
<212> DNA
<213> Eucalyptus grandis

<400> 39
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<210> 40
<211> 986
<212> DNA
<213> Eucalyptus grandis

<400> 40
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gagtttcctg caaaacagtg cactaaagct tccagaggac ctcatgccat gcccaagggc 360
accacctatg atggaacgga gaatcaaacc acagactgaa caggcgttga aatgccccag 420
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tgctcagaat gaagcatcca cctctgcagc cccaggcaac gaagtacctg accggtctcc 660
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aaatacattt aattcattca agtctaacaa tcctggtctg gattttccta gcttaagcac 900
agaccagaat tcactgtttg agaccagcca gccacaactg tcaagagcaa tggcatctgc 960
ccttttttct atgccaatgg ctcctg 986

<210> 41
<211> 313
<212> DNA
<213> Pinus radiata

<400> 41
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cccaaaaatc tct 313

<210> 42
<211> 713
<212> DNA
<213> Pinus radiata

<400> 42
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gaataacatc ggggccttgt tctagacaga gatttttcac aaataacagg ttcgaaggta 180
tgtgtagaca tctgggtagt tgtagaataa agacggagcc cattaggtga tccaatcgaa 240
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tgaatatttg caacagaagt cagttaaaca agtggttgac tgtctgtttg tacaagatgt 480
tactggcata cctgtgggct tgatagagac ttccaggcgc attgtgcatg taaatcattt 540

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caagcttcct agcagcttct acaacttgga atctcttgaa attcactcta gttcccagat 660
atggtgctcg tcgccacatc gtctgcttgt acttgatggc attcaggatc ctg 713

<210> 43
<211> 28
<212> DNA
<213> Pinus radiata

<400> 43
ccacctcaca tcaataaatt ttatacga 28

<210> 44
<211> 35
<212> DNA
<213> Pinus radiata

<400> 44
gctgtttcat tggggtcata gctacgtggt gctga 35

<210> 45
<211> 1729
<212> DNA
<213> Pinus radiata

<400> 45
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tctgtaatta cgaatttagg gtttcctctg tcaatatctg gtagtgacaa acaaggttta 180
atggcagcct tagcaacaac tgaagtttgt gatacatatc cacgccttgt ggagaatggt 240
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gttggaagga gaatccttat gatggctacg ttggataata ggcgtgatta tcgtaggtag 1680
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<210> 46

<211> 1038
<212> DNA
<213> Pinus radiata

<400> 46
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tcattcatta tataagatca gattcgtatg atatacaggc aaccatagaa acaaccagca 180
aagttactag caggaaatcc aactaggtat catgaagact accaacgcag gctcgataat 240
gttggtgctc attatttttg ggtgctgttt cattggggtc atagctacat cttttgattt 300
ctattacttc gttcaacagt ggcctggttc atactgcgat actcgtagag gatgctgtta 360
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gaccggtaaa tggccacagt tctgtggttc ctccgaagaa ttcgactact caaagatctc 480
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gcatcaacta tatcaggtgt atgtgtgtgt tgataaatcc gatgcttcca ctgttattga 840
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taaaaaaaaa aaaaaaaa 1038

<210> 47
<211> 91
<212> DNA
<213> Pinus radiata

<400> 47
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tcctccgaag aattcgatat caagcttatc g 91

<210> 48
<211> 91
<212> DNA
<213> Pinus radiata

<400> 48
gcttttcatc cacactggtg cctcattcat tatataagat cagattcgtg tgatatacag 60
gcaaccatag aaacaaccgg caaagttact a 91

<210> 49
<211> 809
<212> DNA
<213> Pinus radiata

<400> 49
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catgaaaacc gattagggta ttgcaaatta gggcattgcc attcaaataa ttctcagatg 120
aaagattctc tctaacaatt acaaatgatt attttttttcc atgagtgttg catgttcgaa 180
cggtctgccc agtctgtgag agagcataga gaaccctccc tgcccaattt gttagagcat 240
agagaaccct actgcatgag tagtaagaaa aatattcggt ctcaattcgg caaagaccac 300
ctcgaatgga tgacttcaac gacaatctca tgatagtgtt ctgatcagca ccagttcacc 360
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tttcccagta tcatatatcc ttaatactgt tttgtctttt aatccatggc taccatcaga 480
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ccaagctgct gcaacgcggt tgagtcagct gggcttcaat gcctctgtct cgtcgttaac 720
ggccctcctt ttccaggggt cgaccgcggc ctcgcaatgc agctgcctgc caaatgccat 780
ctcacccttc ctccctgtaa cagttagtt 809

<210> 50
<211> 428
<212> DNA
<213> Eucalyptus grandis

<400> 50
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aggactaaag ttttccaccc aaatataaat aacaatggaa gtatctgcct tgacatcttg 120
aaggaacagt ggagtcctgc tttgacaatc tccaaggttt tgctctcaat ttgctctttg 180
ttgacggatc caaacccaga tgatcctctt gtaccagaga ttgctcatat gtacaagact 240
gataggggca aatatgagtc cactgcacgg agttggactc agaaatatgc aatgggttaa 300
ctttaaaaac tatatatcag tgatggaact ttatccctaa gttggaatct cttcgaatca 360
atgacttgtt tgcttgtaag aaatgtttcc ttaagataag tggctttcct caaaacttga 420
ttgaagtg 428

<210> 51
<211> 525
<212> DNA
<213> Pinus radiata

<400> 51
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tgcacccaga tcatccgcta aattgggtgc acttttggca atactgctca tagttgcggc 120
agcgcaggct caagattgct caaatgccat ggacaaattg gctccatgca cttcagcagt 180
gggactgtct agcaatggag tgaagccctc atctgagtgc tgtgatgccc tcaaaggaac 240
cagtactggc tgcgtctgca agtctgtgag agcagtgata tcacttcctg ctaagtgcaa 300
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atcgtggatc tctttaagat tttcagcaag caagtgatag aataaattct cagattttga 420
gatatctata tagcgatttt cagtatcaga ttgtctatag tactcatata tttaagtgat 480
tgaatagcat tctccgattc cgagttggaa acacagacac aatga 525

<210> 52
<211> 1126
<212> DNA
<213> Pinus radiata

<400> 52
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atttaattgt tattgagcca gagagatgcg tagtcgctca tgtcacttgt gtttaccaaa 120
aagacataca taaacacctg cacctaaaag ttataatgat aacatgcata caaccctaca 180
acgtacgtag tcacatgcgg ctagaactta aacccctacc acaaacatag ccacctgcac 240
ccagaagtta taataataac atacatagaa cccttacaat aaaaaaagtt atctccaatg 300
attattaatc tactgcaggc cagccatact cagcttgaac gtgaaaattc gcattgtaag 360
catggcgcca cattaaaata acctcggcaa tattttcatg tccaagtggc cggccagcca 420
cgctcctcgc actctgagaa tactctattc atccacttgt ctctgccccg caactcatat 480
aaatgtggcc aacccaagca ccatatccat gttcattaat cccctctttg ccttcaacta 540
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caaatgccat ggacaaattg gctccatgca cttcagcagt gggactgtct agcaatggag 720
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taaataataa atgattgatt tctctctgca aaaaaaaaaa aaaaaa 1126

<210> 53
<211> 454
<212> DNA
<213> Pinus radiata

<400> 53
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caaatgccat ggacaaattg gctccatgca cttcagcagt gggactgtct agcaatggag 180
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atcagattgt ctatagtact catatattta agtg 454

<210> 54
<211> 335
<212> DNA
<213> Pinus radiata

<400> 54
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cattatattc taatgcagtt gtttgttaat tgaagtgcaa atagttccaa aatgtttaca 180
tgaatcaata gtgaacaaat ccctctgttt tatatcatat tgatggatta ttcgattttt 240
tggtgacgtg gcgcgaaact gcttttcgaa ctcatggaaa tagtaattgt tataatccat 300
aggcatgaga ttcttgttaa tcgtgcacaa ggttt 335

<210> 55
<211> 336
<212> DNA
<213> Pinus radiata

<400> 55
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atataaaaca gagggatttg ttcactattg attcatgtaa acattttgga actatttgca 180
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aacaaagagc aggcctcctt tttaacaggt gcttct 336

<210> 56
<211> 532
<212> DNA
<213> Pinus radiata

<400> 56
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<210> 57
<211> 3103
<212> DNA
<213> Eucalyptus grandis

<400> 57
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<210> 58
<211> 326
<212> DNA
<213> Eucalyptus grandis

<400> 58
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acgtgcctgc cgtgggcccc agtgacgggc cccaaaagtg taaacgaagg aagctcccgg 120
ggatctgatt ggccgcgacg tccgcctctg acgtggcacc accgacgatt ttttttaat 180
atcttggtca agtcctaatt taactatggg gtccagatta gaagcttatc cactatggat 240
taaattaaat caaatgggaa ttaaattaaa ttaaaatcat cgtgcggagg tgcacgagat 300
gcacgagatc cgacggcgca gagcag 326

<210> 59
<211> 311
<212> DNA
<213> Eucalyptus grandis

<400> 59
attactatag ggcacgcgtg gtcgacggcc cgggctggta ctctcactaa ttctttagtt 60
ttccaattta gccccttctg taattgctca tcttctttac caaattctct aatttggccg 120
gcgaagggct gacaagggat tggtcatgtc accctcacca aaggttgccg aaggtccggt 180
gacctcagct gacggccacc tacaccaaat ctagctcact agcagcctaa gcccttcatc 240
aactctagtg aaaggttttg agtatttttt aataaaaaat atttaaaaaa tatatagcga 300
gagctcatta c 311

<210> 60
<211> 2096
<212> DNA
<213> Eucalyptus grandis

<400> 60
gattactata gggcacgcgt ggtcgacggc ccgggctggt ctgagccatt taattcgaga 60
gcacatcgcc caaaattatt cttcttgctg ccataactgt cgaattttct cttttaggta 120
agtaaccaat gatgcatcat gttgacaaaa aggctgatta gtatgatctt ggagttgttg 180
gtgcaaattt gcaagctgac gatggccccc cagggaaatt aaggcgccaa cccagattgc 240
aaagagcaca aagagcacga tccaaccttt ccttaacaag atcatcacca gatcggccag 300
taagggtaat attaatttaa caaatagctc ttgtaccggg aactccgtat ttctctcact 360
tccataaacc cctgattaat ttggtgggaa agcgacagcc aacccacaaa aggtcagatg 420
tcatcccacg agagagagag agagagagag agagagagag agagttttct ctctatattc 480
tggttcaccg gttggagtca atggcatgcg tgacgaatgt acatattggt gtagggtcca 540
atattttgcg ggagggttgg tgaaccgcaa agttcctata tatcgaacct ccaccaccat 600
acctcacttc aatccccacc atttatccgt tttatttcct ctgctttcct ttgctcgagt 660
ctcgcggaag agagagaaga gaggagagga gagaatgggt tcgaccggat ccgagaccca 720
gatgaccccg acccaagtct cggacgagga ggcgaacctc ttcgccatgc agctggcgag 780
cgcctccgtg ctccccatgg tcctcaaggc cgccatcgag ctcgacctcc tcgagatcat 840
ggccaaggcc gggccgggcg cgttcctctc cccgggggaa gtcgcggccc agctcccgac 900
ccagaacccc gaggcacccg tcatgctcga ccggatcttc cggctgctgg ccagctactc 960
cgtgctcacg tgcaccctcc gcgacctccc cgatggcaag gtcgagcggc tctacggctt 1020

agcgccggtg tgcaagttct tggtcaagaa cgaggacggg gtctccatcg ccgcactcaa 1080

cttgatgaac caggacaaaa tcctcatgga aagctggtat tacctgaaag atgcggtcct 1140
tgaaggcgga atcccattca acaaggcgta cgggatgacc gcgttcgagt atcatggcac 1200
cgacccgcga ttcaacaaga tctttaaccg gggaatgtct gatcactcca ccattactat 1260
gaagaagata ctggaaacat acaagggctt cgagggcctc gagaccgtgg tcgatgtcgg 1320
aggcggcact ggggccgtgc tcagcatgat cgttgccaaa tacccatcaa tgaaagggat 1380
caacttcgac cgccccaacg gattgaagac gccccacccc ttcctggtgt caagcacgtc 1440
ggaggcgaca tgttcgtcag cgttccaaag ggagatgcca ttttcatgaa gtggatatgc 1500
catgactgga gtgacgacca ttgcgcgaag ttcctcaaga actgctacga tgcgcttccc 1560
aacaatggaa aggtgatcgt tgcagagtgc gtactccctg tgtacccaga cacgagccta 1620
gcgaccaaga atgtgatcca catcgactgc atcatgttgg cccacaaccc aggcgggaaa 1680
gagaggacac agaaggagtt cgaggcattg gccaaagggg ccggatttca gggcttccaa 1740
gtcatgtgct gcgctttcgg cactcacgtc atggagttcc tgaagaccgc ttgatctgct 1800
cctctgtggt gatgttcatg gttcttggat ttgaaaggtc gtgaaggagc ccttttctca 1860
cagttggctt cggcatacca agttcttctc ataaaaggaa acaataagaa gcgactgtat 1920
gatggcgcaa gtggaagtta caagatttgt tgttttatgt ctataaagtt ttgagtcttc 1980
tgcatactga tttcacagaa tgtgtaacga aacggcgtat atggatgtgc ctgaatgatg 2040
gaaattgtga tattctgtct tctttttcag taaatcactt cgaacaaaaa aaaaaa 2096

<210> 61
<211> 522
<212> DNA
<213> Eucalyptus grandis

<400> 61
ctaaaacgct aatcctgccc tgcccttccc ttctgctgct gctgctcgtc acctctctct 60
ccctctcgcg gccagctgcg agatctgccg agtttaagcc tcgtacatca aaatgggtaa 120
ggagaagatt cacatcagca ttgtggtcat tggccatgtc gattctggga agtcaaccac 180
aactggccac ttgatataca agctcggagg aatcgacaag cgtgtgattg agagattcga 240
gaaggaagct gctgagatga acaagagatc gttcaagtat gcttgggtgc ttgacaagct 300
caaggccgag cgcgagcgcg gtattaccat tgatattgcc ttgtggaagt tcgagaccac 360
caagtactac tgcactgtca ttgatgctcc tggacatcgt gactttatta agaatatgat 420
tactggaacc tcccaggccg actgtgctgt ccttatcatt gattccacca ctggtggttt 480
cgaagctggt atttccaagg atggccagac ccgtgaacat gc 522

<210> 62
<211> 420
<212> DNA
<213> Eucalyptus grandis

<400> 62
tttgatacgc taacaaacaa aacatgtgaa aagcttaatt atggcaatta tcataaatag 60
aaaaaaatta gaaaaaaaga gaggaaatgg gccattattt aaattgcaat cgaaagattg 120
agggcaattc tgtttctcta gtgtaaataa gggtgtattt aataattgag ggatggaaat 180
agcatggtca ctcggtaatt atcaaggaaa gcaagaataa aaatggaaaa aaaaaaaaaa 240
aaagcttgaa gaggccaatg tcgaaattat gagcgcgaga tgaggacact cctgggaaac 300
gaaaaatggc attcgcgggg ggtgctatat aaagcctcgt gtaagggtgc gttcctcact 360
ctcaaaccct aatcctgccc ttcccttctg ctgctgctgc tcgtcacctc tctcctccct 420

<210> 63
<211> 65
<212> PRT
<213> Eucalyptus grandis

<400> 63
Met Asp Asn Ser Lys Met Gly Phe Asn Ala Gly Gln Ala Lys Gly Gln

```
 1               5                  10                  15
Thr Gln Glu Lys Ser Asn Gln Met Met Asp Lys Ala Ser Asn Thr Ala
            20                  25                  30
Gln Ser Ala Arg Asp Ser Met Gln Glu Thr Gly Gln Gln Met Lys Ala
        35                  40                  45
Lys Ala Gln Gly Ala Ala Asp Ala Val Lys Asn Ala Thr Gly Met Asn
    50                  55                  60
Lys
65
```

<210> 64
<211> 152
<212> PRT
<213> Eucalyptus grandis

<400> 64

```
Met Gly Gly Pro Leu Thr Leu Asp Ala Glu Val Glu Val Lys Ser Pro
 1               5                  10                  15
Ala Asp Lys Phe Trp Val Ser Val Arg Asp Ser Thr Lys Leu Phe Pro
            20                  25                  30
Lys Ile Phe Pro Asp Gln Tyr Lys Asn Ile Glu Val Leu Glu Gly Asp
        35                  40                  45
Gly Lys Ala Pro Gly Ser Val Arg Leu Phe Thr Tyr Gly Glu Gly Ser
    50                  55                  60
Pro Leu Val Lys Val Ser Lys Glu Lys Ile Asp Gly Val Asp Glu Ala
65                  70                  75                  80
Asp Lys Val Val Thr Tyr Ser Val Ile Asp Gly Asp Leu Leu Lys Tyr
                85                  90                  95
Tyr Lys Asn Phe Asn Gly Ser Ile Lys Val Ile Pro Lys Gly Asp Gly
            100                 105                 110
Ser Leu Val Lys Trp Ser Cys Gly Phe Glu Lys Ala Ser Asp Glu Ile
        115                 120                 125
Pro Asp Pro His Val Ile Lys Asp Phe Ala Ile Gln Asn Phe Lys Glu
    130                 135                 140
Leu Asp Glu Phe Ile Leu Lys Ala
145                 150
```

<210> 65
<211> 117
<212> PRT
<213> Eucalyptus grandis

<400> 65

```
Met Ala Ala Asn Phe Val Ile Pro Thr Lys Met Lys Ala Trp Val Tyr
 1               5                  10                  15
Arg Glu His Gly Asn Val Ala Asp Val Leu Gly Leu Asp Pro Glu Leu
            20                  25                  30
Lys Val Pro Glu Leu Gln Glu Gly Gln Val Leu Val Lys Val Leu Ala
        35                  40                  45
Ala Ala Leu Asn Pro Val Asp Ala Ala Arg Met Lys Gly Val Ile Lys
    50                  55                  60
Leu Pro Gly Phe Ser Leu Pro Ala Val Pro Gly Tyr Asp Leu Ala Gly
65                  70                  75                  80
Val Val Val Lys Val Gly Arg Glu Val Lys Glu Leu Lys Ile Gly Asp
                85                  90                  95
Glu Val Tyr Gly Phe Met Phe His Ala Lys Lys Asp Gly Thr Leu Ala
            100                 105                 110
```

```
Glu Tyr Ala Ala Val
        115

<210> 66
<211> 318
<212> PRT
<213> Eucalyptus grandis

<400> 66
Met Ala Ala Asn Phe Val Ile Pro Thr Lys Met Lys Ala Trp Val Tyr
 1               5                  10                  15
Arg Glu His Gly Asp Val Ala Asn Val Leu Gly Leu Asp Pro Glu Leu
            20                  25                  30
Lys Val Pro Glu Leu Gln Glu Gly Gln Val Leu Val Lys Val Leu Ala
        35                  40                  45
Ala Ala Leu Asn Pro Ile Asp Thr Ala Arg Val Lys Gly Val Ile Lys
    50                  55                  60
Leu Pro Gly Phe Ser Leu Pro Ala Val Pro Gly Tyr Asp Leu Ala Gly
65                  70                  75                  80
Val Val Val Lys Val Gly Arg Glu Val Lys Glu Leu Lys Val Gly Asp
                85                  90                  95
Glu Val Tyr Gly Phe Met Phe His Ala Lys Lys Asp Gly Thr Leu Ala
            100                 105                 110
Glu Tyr Ala Ala Val Glu Glu Ser Phe Leu Ala Leu Lys Pro Lys Lys
        115                 120                 125
Leu Arg Phe Gly Glu Ala Ala Ser Leu Pro Val Val Ile Gln Thr Ala
    130                 135                 140
Tyr Gly Gly Leu Glu Arg Ala Gly Leu Ser His Gly Lys Ser Leu Leu
145                 150                 155                 160
Val Leu Gly Gly Ala Gly Gly Val Gly Thr Leu Ile Ile Gln Leu Ala
                165                 170                 175
Lys Glu Val Phe Gly Ala Ser Arg Val Ala Ala Thr Ser Ser Thr Gly
            180                 185                 190
Lys Leu Glu Leu Leu Lys Ser Leu Gly Ala Asp Leu Ala Ile Asp Tyr
        195                 200                 205
Thr Lys Val Asn Phe Glu Asp Leu Pro Glu Lys Phe Asp Val Val Tyr
    210                 215                 220
Asp Thr Val Gly Glu Ile Glu Arg Ala Ala Lys Ala Val Lys Pro Gly
225                 230                 235                 240
Gly Ser Ile Val Thr Ile Val Lys Gln Asn Lys Thr Leu Pro Pro Pro
                245                 250                 255
Ala Phe Phe Phe Ala Val Thr Ser Asn Arg Ser Thr Leu Glu Lys Leu
            260                 265                 270
Lys Pro Phe Leu Glu Ser Gly Lys Val Lys Pro Val Ile Asp Pro Lys
        275                 280                 285
Ser Pro Phe Pro Phe Ser Gln Ala Ile Glu Ala Phe Ser Tyr Leu Gln
    290                 295                 300
Thr Arg Arg Ala Thr Gly Lys Leu Val Ile His Pro Val Pro
305                 310                 315

<210> 67
<211> 156
<212> PRT
<213> Eucalyptus grandis

<400> 67
Met Gln Ile Phe Val Lys Thr Leu Thr Gly Lys Thr Ile Thr Leu Glu
```

```
 1               5                  10                  15
Val Glu Ser Ser Asp Thr Val Asp Asn Val Lys Ala Lys Ile Gln Asp
            20                  25                  30
Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
        35                  40                  45
Gln Leu Glu Asp Gly Arg Thr Leu Ala Asp Tyr Asn Ile Gln Lys Glu
    50                  55                  60
Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Met Gln Ile Phe
65                  70                  75                  80
Val Lys Thr Leu Thr Gly Lys Thr Ile Thr Leu Glu Val Glu Ser Ser
                85                  90                  95
Asp Thr Val Asp Asn Val Lys Ala Lys Ile Gln Asp Lys Glu Gly Ile
            100                 105                 110
Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys Gln Leu Glu Asp
        115                 120                 125
Gly Arg Thr Leu Ala Asp Tyr Asn Ile Gln Lys Glu Ser Thr Leu His
    130                 135                 140
Leu Val Leu Arg Leu Lys Gly Gly Met Gln Ile Phe
145                 150                 155
```

<210> 68
<211> 238
<212> PRT
<213> Eucalyptus grandis

<400> 68

```
Met Ala Thr His Ala Ala Leu Ala Pro Ser Thr Leu Pro Ala Asn Ala
 1               5                  10                  15
Lys Phe Ser Ser Lys Ser Ser Ser His Ser Phe Pro Thr Gln Cys Phe
            20                  25                  30
Ser Lys Arg Leu Glu Val Ala Glu Phe Ser Gly Leu Arg Ala Gly Ser
        35                  40                  45
Cys Val Thr Tyr Ala Lys Asn Ala Gly Glu Gly Ser Phe Phe Asp Ala
    50                  55                  60
Val Ala Ala Gln Leu Thr Pro Lys Thr Ser Ala Pro Ala Pro Ala Lys
65                  70                  75                  80
Gly Glu Thr Val Ala Lys Leu Lys Val Ala Ile Asn Gly Phe Gly Arg
                85                  90                  95
Ile Gly Arg Asn Phe Leu Arg Cys Trp His Gly Arg Lys Asn Ser Pro
            100                 105                 110
Leu Asp Val Ile Val Val Asn Asp Ser Gly Gly Val Lys Asn Ala Ser
        115                 120                 125
His Leu Leu Lys Tyr Asp Ser Met Leu Gly Thr Phe Lys Ala Asp Val
    130                 135                 140
Lys Ile Val Asp Asn Glu Thr Ile Ser Val Asp Gly Lys Pro Val Lys
145                 150                 155                 160
Val Val Ser Asn Arg Asp Pro Leu Lys Leu Pro Trp Ala Glu Leu Gly
                165                 170                 175
Ile Asp Ile Val Ile Glu Gly Thr Gly Val Phe Val Asp Gly Pro Gly
            180                 185                 190
Ala Gly Lys His Ile Gln Ala Gly Ala Lys Lys Val Ile Ile Thr Ala
        195                 200                 205
Pro Ala Lys Gly Ala Asp Ile Pro Thr Tyr Val Tyr Gly Val Asn Glu
    210                 215                 220
Thr Asp Tyr Ser His Glu Val Ala Asn Ile Ile Ser Asn Ala
225                 230                 235 .
```

<210> 69
<211> 168
<212> PRT
<213> Eucalyptus grandis

<400> 69
Met Ser Thr Ser Pro Val Ser Ser Trp Cys Ala Thr Ser Phe Ser Pro
 1   5   10   15
Ala His Ser Ser Leu Lys Arg Ala Ala Gly Leu Arg Pro Ser Leu Ser
            20   25   30
Ala Arg Leu Gly Pro Ser Ser Ser Ser Ser Ser Val Ser Pro Pro Thr
        35   40   45
Leu Ile Arg Asn Glu Pro Val Phe Ala Ala Pro Ala Pro Val Ile Asn
    50   55   60
Pro Thr Trp Thr Glu Glu Met Gly Lys Asp Tyr Asp Glu Ala Ile Glu
65   70   75   80
Ala Leu Lys Lys Leu Leu Ser Glu Lys Gly Asp Leu Lys Ala Thr Ala
                85   90   95
Ala Ala Lys Val Glu Gln Ile Thr Ala Glu Leu Gln Thr Ala Ser Pro
            100   105   110
Asp Ile Lys Pro Ser Ser Ser Val Asp Arg Ile Lys Thr Gly Phe Thr
        115   120   125
Phe Phe Lys Lys Glu Lys Tyr Asp Lys Asn Pro Ala Leu Tyr Gly Glu
    130   135   140
Leu Ala Lys Gln Ser Pro Lys Phe Met Val Phe Ala Cys Ser Asp Ser
145   150   155   160
Arg Val Cys Pro Ser His Val Leu
                165

<210> 70
<211> 214
<212> PRT
<213> Eucalyptus grandis

<400> 70
Met Pro Cys Pro Arg Ala Pro Pro Met Met Glu Arg Arg Ile Lys Pro
 1   5   10   15
Gln Thr Glu Gln Ala Leu Lys Cys Pro Arg Cys Asp Ser Thr Asn Thr
            20   25   30
Lys Phe Cys Tyr Tyr Asn Asn Tyr Asn Leu Ser Gln Pro Arg His Phe
        35   40   45
Cys Lys Thr Cys Arg Arg Tyr Trp Thr Lys Gly Gly Ala Leu Arg Asn
    50   55   60
Val Pro Val Gly Gly Gly Cys Arg Lys Asn Lys Arg Ala Lys Arg Ala
65   70   75   80
Val Asp His Pro Val Ser Ala Gln Asn Glu Ala Ser Thr Ser Ala Ala
                85   90   95
Pro Gly Asn Glu Val Pro Asp Arg Ser Pro Phe Glu Pro Pro Ser Ser
            100   105   110
Lys Ser Ile Tyr Tyr Gly Gly Glu Asn Met Asn Leu Thr Gly Leu Pro
        115   120   125
Phe Ser Arg Ile Gln Gln Asp Arg Ala Ala Leu Ala His Cys Asn Ser
    130   135   140
Ser Ser Phe Leu Gly Met Ser Cys Gly Thr Gln Ser Ala Ser Leu Glu
145   150   155   160
Pro His Leu Ser Ala Leu Asn Thr Phe Asn Ser Phe Lys Ser Asn Asn
                165   170   175

```
Pro Gly Leu Asp Phe Pro Ser Leu Ser Thr Asp Gln Asn Ser Leu Phe
            180                 185                 190
Glu Thr Ser Gln Pro Gln Leu Ser Arg Ala Met Ala Ser Ala Leu Phe
        195                 200                 205
Ser Met Pro Met Ala Pro
    210
```

<210> 71
<211> 166
<212> PRT
<213> Pinus radiata

<400> 71

```
Met Ala Ala Leu Ala Thr Thr Glu Val Cys Asp Thr Tyr Pro Arg Leu
 1               5                  10                  15
Val Glu Asn Gly Glu Leu Arg Val Leu Gln Pro Ile Phe Gln Ile Tyr
            20                  25                  30
Gly Arg Arg Arg Ala Phe Ser Gly Pro Ile Val Thr Leu Lys Val Phe
        35                  40                  45
Glu Asp Asn Val Leu Leu Arg Glu Phe Leu Glu Glu Arg Gly Asn Gly
    50                  55                  60
Arg Val Leu Val Val Asp Gly Gly Gly Ser Leu Arg Cys Ala Ile Leu
65                  70                  75                  80
Gly Gly Asn Val Val Val Ser Ala Gln Asn Asn Gly Trp Ser Gly Ile
                85                  90                  95
Ile Val Thr Gly Cys Ile Arg Asp Val Asp Glu Ile Asn Arg Cys Asp
            100                 105                 110
Ile Gly Ile Arg Ala Leu Thr Ser Asn Pro Leu Lys Ala Asn Lys Lys
        115                 120                 125
Gly Val Gly Glu Lys His Ala Pro Ile Tyr Ile Ala Gly Thr Arg Ile
    130                 135                 140
Leu Pro Gly Glu Trp Cys Tyr Ala Asp Ser Asp Gly Ile Leu Val Ser
145                 150                 155                 160
Gln Gln Glu Leu Ser Leu
                165
```

<210> 72
<211> 236
<212> PRT
<213> Pinus radiata

<400> 72

```
Met Leu Val Leu Ile Ile Phe Gly Cys Cys Phe Ile Gly Val Ile Ala
 1               5                  10                  15
Thr Ser Phe Asp Phe Tyr Tyr Phe Val Gln Gln Trp Pro Gly Ser Tyr
            20                  25                  30
Cys Asp Thr Arg Arg Gly Cys Cys Tyr Pro Arg Thr Gly Arg Pro Ala
        35                  40                  45
Ser Glu Phe Ser Ile His Gly Leu Trp Pro Asn Tyr Lys Thr Gly Lys
    50                  55                  60
Trp Pro Gln Phe Cys Gly Ser Ser Glu Glu Phe Asp Tyr Ser Lys Ile
65                  70                  75                  80
Ser Asp Leu Glu Glu Glu Leu Asn Arg Tyr Trp Gly Ser Leu Ser Cys
                85                  90                  95
Pro Ser Ser Asp Gly Gln Glu Phe Trp Gly His Glu Trp Glu Lys His
            100                 105                 110
Gly Thr Cys Ser Leu Asn Leu Asp Glu His Ser Tyr Phe Glu Lys Ala
```

```
        115                 120                 125
Leu Ser Leu Arg Gln Asn Ile Asp Ile Leu Gly Ala Leu Lys Thr Ala
    130                 135                 140
Gly Ile Lys Pro Asp Gly Ser Gln Tyr Ser Leu Ser Asp Ile Lys Glu
145                 150                 155                 160
Ala Ile Lys Gln Asn Thr Gly Gln Leu Pro Gly Ile Asp Cys Asn Thr
                165                 170                 175
Ser Ala Glu Gly Glu His Gln Leu Tyr Gln Val Tyr Val Cys Val Asp
            180                 185                 190
Lys Ser Asp Ala Ser Thr Val Ile Glu Cys Pro Ile Tyr Pro His Ser
        195                 200                 205
Asn Cys Pro Ser Met Val Val Phe Pro Pro Phe Gly Glu Asp Gln Glu
    210                 215                 220
Asp Arg Asp Gly Tyr Thr Glu Gly Met Tyr Glu Leu
225                 230                 235
```

<210> 73
<211> 92
<212> PRT
<213> Pinus radiata

<400> 73

```
Met Ala Ala Pro Arg Ser Ser Ala Lys Leu Gly Ala Leu Leu Ala Ile
 1               5                  10                  15
Leu Leu Ile Val Ala Ala Ala Gln Ala Gln Asp Cys Ser Asn Ala Met
            20                  25                  30
Asp Lys Leu Ala Pro Cys Thr Ser Ala Val Gly Leu Ser Ser Asn Gly
        35                  40                  45
Val Lys Pro Ser Ser Glu Cys Cys Asp Ala Leu Lys Gly Thr Ser Thr
    50                  55                  60
Gly Cys Val Cys Lys Ser Val Arg Ala Val Ile Ser Leu Pro Ala Lys
65                  70                  75                  80
Cys Asn Leu Pro Ala Ile Thr Cys Ser Gly Ser Arg
                85                  90
```

<210> 74
<211> 92
<212> PRT
<213> Pinus radiata

<400> 74

```
Met Ala Ala Pro Arg Ser Ser Ala Lys Ser Ala Ala Leu Phe Ala Ile
 1               5                  10                  15
Leu Leu Ile Val Ala Ala Val Gln Ala Glu Asp Cys Ser Asn Ala Met
            20                  25                  30
Asp Lys Leu Ala Pro Cys Thr Ser Ala Val Gly Leu Ser Ser Asn Gly
        35                  40                  45
Val Lys Pro Ser Ser Glu Cys Cys Asp Ala Leu Lys Gly Thr Ser Thr
    50                  55                  60
Gly Cys Val Cys Lys Ser Val Arg Ala Val Ile Ser Leu Pro Ala Lys
65                  70                  75                  80
Cys Asn Leu Pro Ala Leu Thr Cys Ser Gly Ser Arg
                85                  90
```

<210> 75
<211> 92
<212> PRT

<213> Pinus radiata

<400> 75
Met Ala Ala Pro Arg Ser Ser Ala Lys Leu Gly Ala Leu Leu Ala Ile
 1   5   10   15
Leu Leu Ile Val Ala Ala Ala Gln Ala Gln Asp Cys Ser Asn Ala Met
            20   25   30
Asp Lys Leu Ala Pro Cys Thr Ser Ala Val Gly Leu Ser Ser Asn Gly
        35   40   45
Val Lys Pro Ser Ser Glu Cys Cys Asp Ala Leu Lys Gly Thr Ser Thr
    50   55   60
Gly Cys Val Cys Lys Ser Val Arg Ala Val Ile Ser Leu Pro Ala Lys
65   70   75   80
Cys Asn Leu Pro Ala Ile Thr Cys Ser Gly Ser Arg
                85   90

<210> 76
<211> 125
<212> PRT
<213> Eucalyptus grandis

<400> 76
Met Ala Asp Arg Met Leu Thr Arg Ser His Ser Leu Arg Glu Arg Leu
 1   5   10   15
Asp Glu Thr Leu Ser Ala His Arg Asn Asp Ile Val Ala Phe Leu Ser
            20   25   30
Arg Val Glu Ala Lys Gly Lys Gly Ile Leu Gln Arg His Gln Ile Phe
        35   40   45
Ala Glu Phe Glu Ala Ile Ser Glu Glu Ser Arg Ala Lys Leu Leu Asp
    50   55   60
Gly Ala Phe Gly Glu Val Leu Lys Ser Thr Gln Glu Ala Ile Val Ser
65   70   75   80
Pro Pro Trp Val Ala Leu Ala Val Arg Pro Arg Pro Gly Val Trp Glu
                85   90   95
His Ile Arg Val Asn Val His Ala Leu Val Leu Glu Gln Leu Glu Val
            100   105   110
Ala Glu Tyr Leu His Phe Lys Glu Glu Leu Ala Asp Gly
        115   120   125

<210> 77
<211> 805
<212> PRT
<213> Eucalyptus grandis

<400> 77
Met Ala Asp Arg Met Leu Thr Arg Ser His Ser Leu Arg Glu Arg Leu
 1   5   10   15
Asp Glu Thr Leu Ser Ala His Arg Asn Asp Ile Val Ala Phe Leu Ser
            20   25   30
Arg Val Glu Ala Lys Gly Lys Gly Ile Leu Gln Arg His Gln Ile Phe
        35   40   45
Ala Glu Phe Glu Ala Ile Ser Glu Glu Ser Arg Ala Lys Leu Leu Asp
    50   55   60
Gly Ala Phe Gly Glu Val Leu Lys Ser Thr Gln Glu Ala Ile Val Ser
65   70   75   80
Pro Pro Trp Val Ala Leu Ala Val Arg Pro Arg Pro Gly Val Trp Glu
                85   90   95

```
His Ile Arg Val Asn Val His Ala Leu Val Leu Glu Gln Leu Glu Val
            100                 105                 110
Ala Glu Tyr Leu His Phe Lys Glu Glu Leu Ala Asp Gly Ser Leu Asn
        115                 120                 125
Gly Asn Phe Val Leu Glu Leu Asp Phe Glu Pro Phe Thr Ala Ser Phe
    130                 135                 140
Pro Arg Pro Thr Leu Ser Lys Ser Ile Gly Asn Gly Val Glu Phe Leu
145                 150                 155                 160
Asn Arg His Leu Ser Ala Lys Leu Phe His Asp Lys Glu Ser Leu His
                165                 170                 175
Pro Leu Leu Glu Phe Leu Gln Val His Cys Tyr Lys Gly Lys Asn Met
            180                 185                 190
Met Val Asn Ala Arg Ile Gln Asn Val Phe Ser Leu Gln His Val Leu
        195                 200                 205
Arg Lys Ala Glu Glu Tyr Leu Thr Ser Leu Lys Pro Glu Thr Pro Tyr
    210                 215                 220
Ser Gln Phe Glu His Lys Phe Gln Glu Ile Gly Leu Glu Arg Gly Trp
225                 230                 235                 240
Gly Asp Thr Ala Glu Arg Val Leu Glu Met Ile Gln Leu Leu Leu Asp
                245                 250                 255
Leu Leu Glu Ala Pro Asp Pro Cys Thr Leu Glu Lys Phe Leu Asp Arg
            260                 265                 270
Val Pro Met Val Phe Asn Val Val Ile Met Ser Pro His Gly Tyr Phe
        275                 280                 285
Ala Gln Asp Asp Val Leu Gly Tyr Pro Asp Thr Gly Gly Gln Val Val
    290                 295                 300
Tyr Ile Leu Asp Gln Val Arg Ala Leu Glu Glu Glu Met Leu His Arg
305                 310                 315                 320
Ile Lys Gln Gln Gly Leu Asp Ile Thr Pro Arg Ile Leu Ile Ile Thr
                325                 330                 335
Arg Leu Leu Pro Asp Ala Val Gly Thr Thr Cys Gly Gln Arg Leu Glu
            340                 345                 350
Lys Val Phe Gly Thr Glu Tyr Ser His Ile Leu Arg Val Pro Phe Arg
        355                 360                 365
Asn Glu Lys Gly Val Val Arg Lys Trp Ile Ser Arg Phe Glu Val Trp
    370                 375                 380
Pro Tyr Leu Glu Arg Tyr Thr Glu Asp Val Ala Ser Glu Leu Ala Gly
385                 390                 395                 400
Glu Leu Gln Gly Lys Pro Asp Leu Ile Ile Gly Asn Tyr Ser Asp Gly
                405                 410                 415
Asn Ile Val Ala Ser Leu Leu Ala His Lys Leu Gly Val Thr Gln Cys
            420                 425                 430
Thr Ile Ala His Ala Leu Glu Lys Thr Lys Tyr Pro Glu Ser Asp Ile
        435                 440                 445
Tyr Trp Lys Lys Phe Glu Glu Lys Tyr His Phe Ser Cys Gln Phe Thr
    450                 455                 460
Ala Asp Leu Ile Ala Met Asn His Thr Asp Phe Ile Ile Thr Ser Thr
465                 470                 475                 480
Phe Gln Glu Ile Ala Gly Ser Lys Asp Thr Val Gly Gln Tyr Glu Ser
                485                 490                 495
His Met Asn Phe Thr Leu Pro Gly Leu Tyr Arg Val Val His Gly Ile
            500                 505                 510
Asp Val Phe Asp Pro Lys Phe Asn Ile Val Ser Pro Gly Ala Asp Met
        515                 520                 525
Ser Ile Tyr Phe Ala Tyr Thr Glu Gln Glu Arg Arg Leu Lys Ser Phe
    530                 535                 540
His Pro Glu Ile Glu Glu Leu Leu Phe Ser Asp Val Glu Asn Lys Glu
```

```
545                 550                 555                 560
His Leu Cys Val Leu Lys Asp Lys Lys Lys Pro Ile Ile Phe Thr Met
                565                 570                 575
Ala Arg Leu Asp Arg Val Lys Asn Leu Thr Gly Leu Val Glu Trp Tyr
            580                 585                 590
Gly Lys Asn Ser Lys Leu Arg Glu Leu Ala Asn Leu Val Val Val Gly
        595                 600                 605
Gly Asp Arg Arg Lys Asp Ser Lys Asp Leu Glu Glu Gln Ser Glu Met
    610                 615                 620
Lys Lys Met Tyr Asp Leu Ile Glu Lys Tyr Lys Leu Asn Gly Gln Phe
625                 630                 635                 640
Arg Trp Ile Ser Ser Gln Met Asn Arg Val Arg Asn Gly Glu Leu Tyr
                645                 650                 655
Arg Tyr Ile Cys Asp Thr Lys Gly Val Phe Val Gln Pro Ala Ile Tyr
            660                 665                 670
Glu Ala Phe Gly Leu Thr Val Val Glu Ala Met Thr Cys Gly Leu Pro
        675                 680                 685
Thr Phe Ala Thr Cys Asn Gly Gly Pro Ala Glu Ile Ile Val His Gly
    690                 695                 700
Lys Ser Gly Tyr His Ile Asp Pro Tyr His Gly Asp Gln Ala Ala Glu
705                 710                 715                 720
Leu Leu Val Asp Phe Phe Asn Lys Cys Lys Ile Asp Gln Ser His Trp
                725                 730                 735
Asp Glu Ile Ser Lys Gly Ala Met Gln Arg Ile Glu Glu Lys Tyr Thr
            740                 745                 750
Trp Lys Ile Tyr Ser Glu Arg Leu Leu Asn Leu Thr Ala Val Tyr Gly
        755                 760                 765
Phe Trp Lys His Val Thr Asn Leu Asp Arg Arg Glu Ser Arg Arg Tyr
    770                 775                 780
Leu Glu Met Phe Tyr Ala Leu Lys Tyr Arg Pro Leu Ala Gln Ser Val
785                 790                 795                 800
Pro Pro Ala Val Glu
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<210> 78
<211> 264
<212> PRT
<213> Eucalyptus grandis

<400> 78

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Met Gly Ser Thr Gly Ser Glu Thr Gln Met Thr Pro Thr Gln Val Ser
 1               5                  10                  15
Asp Glu Glu Ala Asn Leu Phe Ala Met Gln Leu Ala Ser Ala Ser Val
            20                  25                  30
Leu Pro Met Val Leu Lys Ala Ala Ile Glu Leu Asp Leu Leu Glu Ile
        35                  40                  45
Met Ala Lys Ala Gly Pro Gly Ala Phe Leu Ser Pro Gly Glu Val Ala
    50                  55                  60
Ala Gln Leu Pro Thr Gln Asn Pro Glu Ala Pro Val Met Leu Asp Arg
65                  70                  75                  80
Ile Phe Arg Leu Leu Ala Ser Tyr Ser Val Leu Thr Cys Thr Leu Arg
                85                  90                  95
Asp Leu Pro Asp Gly Lys Val Glu Arg Leu Tyr Gly Leu Ala Pro Val
            100                 105                 110
Cys Lys Phe Leu Val Lys Asn Glu Asp Gly Val Ser Ile Ala Ala Leu
        115                 120                 125
Asn Leu Met Asn Gln Asp Lys Ile Leu Met Glu Ser Trp Tyr Tyr Leu
```

```
    130                 135                 140
Lys Asp Ala Val Leu Glu Gly Gly Ile Pro Phe Asn Lys Ala Tyr Gly
145                 150                 155                 160
Met Thr Ala Phe Glu Tyr His Gly Thr Asp Pro Arg Phe Asn Lys Ile
                165                 170                 175
Phe Asn Arg Gly Met Ser Asp His Ser Thr Ile Thr Met Lys Lys Ile
            180                 185                 190
Leu Glu Thr Tyr Lys Gly Phe Glu Gly Leu Glu Thr Val Val Asp Val
        195                 200                 205
Gly Gly Gly Thr Gly Ala Val Leu Ser Met Ile Val Ala Lys Tyr Pro
    210                 215                 220
Ser Met Lys Gly Ile Asn Phe Asp Arg Pro Asn Gly Leu Lys Thr Pro
225                 230                 235                 240
His Pro Phe Leu Val Ser Ser Thr Ser Glu Ala Thr Cys Ser Ser Ala
                245                 250                 255
Phe Gln Arg Glu Met Pro Phe Ser
            260
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<210> 79
<211> 136
<212> PRT
<213> Eucalyptus grandis

<400> 79

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Met Gly Lys Glu Lys Ile His Ile Ser Ile Val Val Ile Gly His Val
 1               5                  10                  15
Asp Ser Gly Lys Ser Thr Thr Thr Gly His Leu Ile Tyr Lys Leu Gly
            20                  25                  30
Gly Ile Asp Lys Arg Val Ile Glu Arg Phe Glu Lys Glu Ala Ala Glu
        35                  40                  45
Met Asn Lys Arg Ser Phe Lys Tyr Ala Trp Val Leu Asp Lys Leu Lys
    50                  55                  60
Ala Glu Arg Glu Arg Gly Ile Thr Ile Asp Ile Ala Leu Trp Lys Phe
65                  70                  75                  80
Glu Thr Thr Lys Tyr Tyr Cys Thr Val Ile Asp Ala Pro Gly His Arg
                85                  90                  95
Asp Phe Ile Lys Asn Met Ile Thr Gly Thr Ser Gln Ala Asp Cys Ala
            100                 105                 110
Val Leu Ile Ile Asp Ser Thr Thr Gly Gly Phe Glu Ala Gly Ile Ser
        115                 120                 125
Lys Asp Gly Gln Thr Arg Glu His
    130                 135
```

<210> 80
<211> 229
<212> PRT
<213> Eucalyptus grandis

<400> 80

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Met Gln Ile Phe Val Lys Thr Leu Thr Gly Lys Thr Ile Thr Leu Glu
 1               5                  10                  15
Val Glu Ser Ser Asp Thr Ile Asp Asn Val Lys Ala Lys Ile Gln Asp
            20                  25                  30
Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
        35                  40                  45
Gln Leu Glu Asp Gly Arg Thr Leu Ala Asp Tyr Asn Ile Gln Lys Glu
    50                  55                  60
```

```
Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Met Gln Ile Phe
65                  70                  75                  80
Val Lys Thr Leu Thr Gly Lys Thr Ile Thr Leu Glu Val Glu Ser Ser
                85                  90                  95
Asp Thr Ile Asp Asn Val Lys Ala Lys Ile Gln Asp Lys Glu Gly Ile
            100                 105                 110
Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys Gln Leu Glu Asp
        115                 120                 125
Gly Arg Thr Leu Ala Asp Tyr Asn Ile Gln Lys Glu Ser Thr Leu His
    130                 135                 140
Leu Val Leu Arg Leu Arg Gly Gly Met Gln Ile Phe Val Lys Thr Leu
145                 150                 155                 160
Thr Gly Lys Thr Ile Thr Leu Glu Val Glu Ser Ser Asp Thr Ile Asp
                165                 170                 175
Asn Val Lys Ala Lys Ile Gln Asp Lys Glu Gly Ile Pro Pro Asp Gln
            180                 185                 190
Gln Arg Leu Ile Phe Ala Gly Lys Gln Leu Glu Asp Gly Arg Thr Leu
        195                 200                 205
Ala Asp Tyr Asn Ile Gln Lys Glu Ser Thr Leu His Leu Val Leu Arg
    210                 215                 220
Leu Arg Gly Gly Phe
225
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<210> 81
<211> 345
<212> DNA
<213> Eucalyptus grandis

<400> 81
taataaatga tgaatttatt ataaacgtat ccgtttgaga tttttgtggg tcataggtgt 60
atcaatttga aatctttgat agtaacaaaa ataatttttag gtagtttatg ttttttcatga 120
tataaacctt gaaagttaat gctactaaat tgttatatat atattaggca aattacaacc 180
ttaatgcaac agttaatgac gtgatactgt tcagattata gatacaatgg ttatccttga 240
atgaataaga agaagtccta agggcaagtg ctatgagctt gcacgactgc ttttgcgcca 300
tttttgttta ccagcccggg ccgtcgacca cgcgtgccct atagt 345

<210> 82
<211> 72
<212> DNA
<213> Eucalyptus grandis

<400> 82
cagtagggga cttgttcccc caagggcacg tgtcgttggt gaagctctgg cggtggatga 60
accgcgtggg cc 72

<210> 83
<211> 544
<212> DNA
<213> Eucalyptus grandis

<400> 83
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atcagaaccg gcgatggaaa tgaaaccctc gttctctctc cctcgctcct ctctttcttc 120
tatccaggag cgtttgtaca ctgggagtac agagcttctt gcgataccga aactaccctt 180
ggacgactgg ccttttttgcc tcgcgccccc tctctgagcc ggggcgcaat ttgtcccttt 240
cccagagcga agtgtcgatt ttgtccttcc acgaggcttt acctactccc atcgcccgag 300
ccccaagccc aggcccaaat gcctgttcct tgtggccctg ccaacattcc ctttgaaatt 360

aaaaaattaa aaaaaaactc tctgccaggc aaaagtaaag attaacacca ccaaaattta 420
taacaaattt atcattcatt aattttcgtt aaattttatt ttcaaattac tgagtcgaat 480
tacatgtata aattcacgga tgtatcggtt cgagatttta tcctctaatt atcattagtg 540
tatg 544

<210> 84
<211> 515
<212> DNA
<213> Eucalyptus grandis

<400> 84
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ttttttgtaa ctttttaaaa tgtagtttta aatttaattt aattactttt tatattaatt 120
atttaccaca tcagagacaa aacaatgtct tttttgtatt ttctagtcac gtcaacatgc 180
aaaacaacgc cattttgcac tcaccttgcc ggaaaattgc cacgtcaaca atttggctag 240
agtggcgctt aagtgatcta ttttgctcca attttggcac ttaagtgtca ttttcctaaa 300
ttttagcact taaagtattc ctctatgtca agttttgaca cttggggtgt actttgtcca 360
atcataaacc gtataagttc actttaaaca aaaatggcgc aaaagcagtc gtgcaagctc 420
atagcacttg cccttaggac ttcttcttat tcattcaagg ataaccattg tatctataat 480
ctgaacagta tcacgtcatt aactgttgca ttaag 515

<210> 85
<211> 515
<212> DNA
<213> Eucalyptus grandis

<400> 85
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tatccaggag cgtttgtaca ctgggagtac agagcttctt gcgataccga aactaccctt 180
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ccccaagccc aggcccaaat gcctgttcct tgtggccctg ccaacattcc ctttgaaatt 360
aaaaaattaa aaaaaaactc tctgccaggc aaaagtaaag attaacacca ccaaaattta 420
taacaaattt atcattcatt aattttcgtt aaattttatt ttcaaattac tgagtcgaat 480
tacatgtata aattcacgga tgtatcggtt cgaga 515

<210> 86
<211> 782
<212> DNA
<213> Eucalyptus grandis

<400> 86
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tcttaagtgc atcttatcag taaacatgga atatcctgaa ctttgattat atgccggctc 600
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ccagtctgtt ctctggggga tttgcttggt gggtagtggc aatcagatgg ttttgtcact 720
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ct 782

<210> 87
<211> 115
<212> PRT
<213> Eucalyptus grandis

<400> 87
Met Pro Cys Leu Asn Ile Ser Thr Asn Val Ser Leu Asp Gly Leu Asp
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Thr Ser Ala Ile Leu Ser Glu Thr Thr Ser Gly Val Ala Lys Leu Ile
            20   25   30
Gly Lys Pro Glu Ala Tyr Val Met Ile Val Leu Lys Gly Ser Val Pro
        35   40   45
Met Ala Phe Gly Gly Thr Glu Gln Pro Ala Ala Tyr Gly Glu Leu Val
    50   55   60
Ser Ile Gly Gly Leu Asn Pro Asp Val Asn Lys Lys Leu Ser Ala Ala
65   70   75   80
Ile Ala Ser Ile Leu Glu Thr Lys Leu Ser Ile Pro Lys Ser Arg Phe
                85   90   95
Phe Leu Lys Phe Tyr Asp Thr Lys Gly Ser Phe Phe Gly Trp Asn Gly
            100   105   110
Ser Thr Phe
        115

<210> 88
<211> 1521
<212> DNA
<213> Pinus radiata

<400> 88
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tgtcgaatac atcaagcaca tgaagaagca atttgtgcca taggctatct ttagcctcat   180
ggatgttaaa ataatttctt tctttccttc cttcttcttt cttacccacc aaaacacaaa   240
ataatagttt caaattttga attttcaccc aattttatga gaggacaaaa ttacttagag   300
tctttcactc tttaatttat attctacata agtacctaaa gaggctctcc gacaatcata   360
tgataccata aaagtaacct cgattagaga gcgcctctcc atacaatcat ttgattttcg   420
agttaaatca aaattatagg ctatttccaa atcaatctat cgtccaactg aaaatttcaa   480
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gattaagttg actcaaggtt gtagaaggtt gacataacaa tagcatgcag gcacaggatg   660
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ctacaagtgc atgcaaaggc catggaagtt gatggttagt gaaaagatcc ggagagacga   780
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ccccgtcctc cgccagaagc tcgaaaggct ttgcaagacg acgacggtga agacgcgata   1380
cgtggtgatg tcggatgaaa tattggcgca gcatcctgag ctggcagtgg aaggttcggc   1440
caccgtccga cagcgactcg agatctcgaa cgtggccgtg accgacatgg cggtggacgc   1500
gtgccgtgac tgcctcaaag a   1521

<210> 89
<211> 2590
<212> DNA
<213> Eucalyptus grandis

<400> 89
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aaaaaggtcc tacctttgac tccccccgcg tcccaaattc tcactcccga ccggtaaccg 420
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aaagacaacg aaacagtctc tccatcccgc catccgacac gatccacatt acggtacgga 540
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atgcctggtg 2590

<210> 90
<211> 1172
<212> DNA
<213> Eucalyptus grandis

<400> 90

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aggtaaatgt tataaaccaa attccaaaat tccgaagcac taaatatatt tgctgatctt 480
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aagtacacaa aggtggacca cgagcgccgc gtgaaagaaa cggaggcgat cgaaggtggg 1080
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<210> 91
<211> 446
<212> DNA
<213> Eucalyptus grandis

<400> 91
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atcattttat gaaatcgata cactaacctt tgtttctcct aaacccaaag gcattaatcc 180
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ttccctttcc attgttgcgt ttaagccctc caattttctt ttggcgtccc gtttttgggg 360
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<210> 92
<211> 2119
<212> DNA
<213> Pinus radiata

<400> 92
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tgaagctcat agaacattgc aacaagagat cgagagtgtg ggttagaaaa ccgcaacaat 660
agtttgtgtc gtgtttttct atattcagag gtgttgtgtg gtaaatatct ctggatttat 720
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<211> 222
<212> DNA
<213> Pinus radiata

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cgtcggccgt cggatgcagc atcggacggc aaagaaggaa ccctaaaacg cattgcaacg 180
tgcttggtgg gtggagggtc tatggccaga tatgttgtaa tc 222

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<211> 597
<212> DNA
<213> Pinus radiata

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<210> 101
<211> 669
<212> DNA
<213> Pinus radiata

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tagcatgcga gacttgcact aaaacgaaca tggtcatggt ttttggtgaa atcaccacca 660
aggccgatg 669

<210> 102
<211> 230
<212> DNA
<213> Pinus radiata

<400> 102
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tgcctttacc atcagaatca agcacgaaga gtaaatatca cccatgcttt acaagtgggt 120
tggtagcatt agcgattccc ttcaccaaat gaacccttg ctggtgatga gtggacaacc 180
taaagttgtt tgctggtgat gagtggacaa ccagagtggg ggttggggaa 230

<210> 103
<211> 596
<212> DNA
<213> Eucalyptus grandis

<400> 103
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gtcgtcggcg ccttcttctt tacagattgt atcctcccat taaccgcgtg gacctgcact 180
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<210> 104
<211> 653
<212> DNA
<213> Eucalyptus grandis

<400> 104
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tcggcgaccc tcaccaatgc tggggcgagg gtgagcaacc ctcatccaaa tctggagagg 180
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cagatccacc cgattttctc ccggccctcg acaactccca ccaccacctc tttcctccct 540
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<210> 105
<211> 342
<212> DNA
<213> Eucalyptus grandis

<400> 105
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ataggataga attatcttct gtcttgatgg tttccatgag aaccaactgc tatactatga 120
aaaatatcaa tgttccacaa tatttttggg acaagggaac acaagattga gtcaacagtt 180
caggacccca gaaaaattat tcctgagttc gcagattatt ttcctaaaag tgaacaattc 240
aagaccctag ccaaatcatt cccaagtcca agttatgtga cactgcgact aacaaggcaa 300
gttggaagaa accatcaatc aatctcctag ttaatgacag tc 342

<210> 106
<211> 342
<212> DNA
<213> Eucalyptus grandis

<400> 106
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ccgagggtgt ccacccttgt ctgatccgca attgctcttg gtcgtgctga attttagagt 300
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<210> 107
<211> 948
<212> DNA
<213> Eucalyptus grandis

<400> 107

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<210> 108
<211> 362
<212> DNA
<213> Eucalyptus grandis

<400> 108
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cc 362

<210> 109
<211> 326
<212> DNA
<213> Eucalyptus grandis

<400> 109
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attttgacgg ttctcttgac tttactatct caacgattac tttatttcat catgttgacg 180
gttgcatcca tgattgttga cttcactttt tgtcgattcc ttcaagctgc tgattcttca 240
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cttgtccaca ataattaaat tcggta 326

<210> 110
<211> 296
<212> DNA
<213> Pinus radiata

<400> 110
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agcctaatct gaaggaagtt cgagtaatag agtgagaaat ggatcttctt ctcctcatga 240
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<210> 111

<211> 723
<212> DNA
<213> Pinus radiata

<400> 111
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<210> 112
<211> 1301
<212> DNA
<213> Pinus radiata

<400> 112
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<210> 113
<211> 3070
<212> DNA
<213> Eucalyptus grandis

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<211> 1227
<212> DNA
<213> Pinus radiata

<400> 114
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<210> 115
<211> 1169
<212> DNA
<213> Eucalyptus grandis

<400> 115
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<213> Eucalyptus grandis

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<210> 118
<211> 1928
<212> DNA
<213> Eucalyptus grandis

<400> 118

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<211> 602
<212> DNA
<213> Eucalyptus grandis

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<210> 120
<211> 1326
<212> DNA
<213> Pinus radiata

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<213> Eucalyptus grandis

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<211> 1273
<212> DNA
<213> Eucalyptus grandis

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<212> DNA
<213> Eucalyptus grandis

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<210> 128
<211> 25
<212> DNA
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